

ABSTRACT OF THE DISCLOSURE

A method of heat treatment for an efficient forming of two-layered oxide film on the inside surface of a Ni-base alloy tube. The oxide film suppresses the Ni release in a high-temperature water environment.

At least two gas supplying devices are provided on the outlet side of a continuous heat treatment furnace; or one gas supplying device is provided respectively on the outlet side and the inlet side thereof. The tube is put into the furnace while supplying an atmospheric gas into the tube from the front end of the tube moving direction with one of these gas supplying devices and a gas introducing pipe, which is arranged inside the furnace, and this tube is maintained at 650 to 1200 °C for 1 to 1200 minutes. The atmospheric gas consists of hydrogen or a mixture of hydrogen and argon, whose dew point is in a range of from -60 °C to +20 °C. After the front end of the Ni-base alloy tube reaches the outlet side of the furnace, the supply of atmospheric gas into the tube is switched to the supply from other gas supplying device. The operations are repeated.